State of California

Memorandum

To : Executive Officers
Water Quality Attorneys

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Subject: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs), TO-BE-CONSIDERED REQUIREMENTS (TBCs), AND PERMIT REQUIREMENTS OF CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, 42 U.S.C. §§ 9601 et seq., (hereinafter "CERCLA") is a federal law that requires remedial actions at sites subject to CERCLA to attain applicable or relevant and appropriate requirements (ARARs), including state requirements, as defined in §121(d) of CERCLA. Remedial actions must also attain other requirements (To-Be-Considered Requirements (TBCs)) if necessary to protect public health and the environment. The purpose of this Memorandum is to guide the State and Regional Water Boards in complying with the CERCLA process for identifying state ARARs to make sure that state requirements are incorporated into CERCLA cleanups.

This Memorandum addresses issues concerning ARARs, TBCs, and permits at CERCLA sites. Part I defines ARARs and their use at appropriate sites. Parts IL and III discuss criteria for determining whether a state requirement is an ARAR or a TBC and the process for choosing and enforcing ARARs. Part IV discusses TBCs. Part V discusses permit requirements at National Priority List (NPL) sites. Part VI discusses ARARs and permit requirements at non-NPL sites. Part VII summarizes the typical ARARs and TBCs used by the Regional Water Boards. Part VIII provides a list of reference documents. Attached to this Memorandum is a chart that the Regional Water Boards may use to identify ARARs for specific sites.

If you have questions or comments concerning this Memorandum, please contact Frances McChesney at the State Water Resources Control Board (State Water Board) at (916) 657-2106 or 8-437-2106 or Jon Marshack at the Regional Water Quality Control Board, Central Valley Region (Regional Water Board) at ~~(916) 361-5724 or 8-495-5724.~~ (916) 255-3123 or 8-494-3123.

I. GENERAL CERCLA REQUIREMENTS FOR STATE ARARS

CERCLA was enacted in 1980 and amended in 1986 for the purpose of remediating hazardous waste sites. CERCLA established a "Superfund" to be used by the Environmental Protection Agency (EPA) to respond to releases of hazardous substances at certain sites, including primarily sites on the NPL. Sites listed on the NPL are considered the worst sites in the country and are compiled with input from the states. CERCLA also authorizes EPA to take enforcement actions to require responsible parties to remediate sites. The Superfund Amendments and Reauthorization Act (SARA) which amended CERCLA included the Defense Environmental Restoration Program (DERP), 10 U.S.C. §§2701 et seq. Section 120 of CERCLA specified that all federal agencies must comply with CERCLA to the same extent as any private party. DERP established specific requirements for the Department of Defense (DOD), including environmental restoration requirements, authority to pay for state support services, and a requirement to pay for state permit fees and charges.

CERCLA authorized the President of the United States to carry out its mandates. The President has delegated this authority primarily to EPA, but also to other federal agencies for property under their control. See Executive Order 12580.

Under CERCLA, remedial actions selected by EPA or other delegated federal agency (hereinafter referred to as EPA unless specifically noted) for sites listed on the NPL, other fund-financed sites, and federal facilities must be protective of human health and the environment. CERCLA §121(d)(1), 42 U.S.C. §9621(d)(1). If the CERCLA hazardous substances are to remain onsite, the remedial action must attain "legally **applicable or relevant and appropriate**" requirements (ARARs). CERCLA §121(d)(2)(A), 42 U.S.C. §9621(d)(2)(A). ARARs are defined in CERCLA as standards, requirements, criteria, or limitations of federal environmental laws and any more stringent standards, requirements, criteria, or limitations of state environmental or facility siting laws. CERCLA §121(d)(2), 42 U.S.C. 9621(d)(2). To qualify as a state ARAR, the requirement must be a **state** environmental or facility siting law, not a local law. The requirement must be promulgated (legally enforceable and of general applicability), more stringent than the federal

requirement, and identified in a timely manner. EPA may waive ARARs in certain situations, including those where state ARARs have not been consistently applied. See CERCLA §121(d)(4).

According to CERCLA §121(d) the issue of ARARs is only relevant at facilities (1) that are listed on the NPL or subject to EPA enforcement actions; (2) where EPA is spending funds from the Superfund, including emergency response actions ("fund-financed actions"); or (3) that are federal facilities. CERCLA §120, 42 U.S.C. §9620.[1] In this memorandum, sites subject to the ARAR process are referred as "CERCLA sites".

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. 40 CFR 300.5. **Relevant and appropriate requirements** are those same standards mentioned above that, while not applicable at the CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. 40 CFR 300.5. EPA has divided ARARs into three categories to facilitate their identification:

- **Chemical-specific ARARs** are usually health- or risk-based numerical values or methodologies used to determine acceptable concentrations of chemicals that may be found in or discharged to the environment, e.g., Maximum Contaminant Levels (MCLs) or other water quality criteria that establish safe levels in drinking water.

- **Location-specific ARARs** restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of areas regulated under various federal and state laws include flood plains, wetlands, and locations where endangered species or historically significant cultural resources are present.

- **Action-specific ARARs** are usually technology- or activity-based requirements or limitations on actions or conditions involving specific substances.

In addition to ARARs EPA evaluates **to-be-considered** requirements (TBCs), which are non-promulgated criteria, advisories, guidance, or proposed regulations issued by the federal or state

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1 CERCLA §121, concerning ARARs, applies to all NPL sites, whether federal or private facilities. However, for those federal facilities that are not on the NPL, all state laws concerning removal and remedial action also apply to the sites. See CERCLA §120(a)(4). See Part IV of this memorandum.

government that are not legally binding and do not have the status of potential ARARs. However, in many circumstances TBCs will be considered along with ARARs as part of the site risk assessment and may be used in determining the necessary level of cleanup for protection of health or the environment. EPA has stated that cleanup goals for some substances may have to be based on non-promulgated criteria and advisories rather than on ARARs because ARARs do not exist for those substances or because an ARAR alone would not be sufficiently protective in the given circumstances. In these situations, the cleanup requirements, in order to meet the cleanup goals, will not be based on ARARs alone but also on TBCs.[2]

It is important to understand that ARARs govern the degree of cleanup at the site and apply only where the hazardous substance will remain onsite. ARARs address the extent to which federal or state laws, regulations, and other requirements apply to a CERCLA site. If the hazardous substance remains onsite, the final remedial action must, in most situations, attain ARARs. EPA may select a remedial action that does not attain ARARs in certain circumstances, i.e., it may waive ARARs. CERCLA §121(d)(4)(E), 42 U.S.C. §9621(d)(4)(E).[3]

If the hazardous substance is taken offsite, the transport, storage, treatment, or disposal of that substance must comply with all legally applicable federal, state, and local requirements. See CERCLA §121(d)(3), 42 U.S.C. §9621(d)(3). The hazardous substance is considered to remain onsite where, for example, the ground water is contaminated. In such a case, the contaminated aquifer must attain ARARs. If the treated water is discharged offsite, e.g., to a surface stream, the discharge is subject to all applicable state requirements, including permit requirements. If the treated water is discharged onsite, the discharge must comply with ARARs, but not permit requirements.

CERCLA applies to the cleanup of "hazardous substances" and "pollutants or contaminants" as defined in CERCLA. If the substance to be cleaned up is not a CERCLA hazardous substance,

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2 See U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, "CERCLA Compliance With Other Laws Manual", August 1988, Supplement September 1989.

3 The remedial action need not attain ARARs if EPA finds that:
- *state ARARs have not been consistently applied;*
- *the remedial action selected is only part of a total remedial action;*
- *compliance with the ARAR is technically impracticable from an engineering perspective;*
- *there is insufficient federal funding where other sites pose a greater environmental or public health threat.*

See CERCLA §121(d)(4) for further conditions.

CERCLA requirements may not apply. The terms "hazardous substance" and "pollutants or contaminants" are defined in CERCLA Section 101 and specifically exclude petroleum. Because petroleum is excluded from CERCLA, the cleanup of petroleum that has, for example, leaked from an underground tank would not be subject to CERCLA unless the petroleum has commingled with a CERCLA hazardous substance. A number of pesticides are not listed as CERCLA hazardous substances. Where CERCLA does not apply to the waste, the ARAR process need not be followed. Instead, even if a site is on the NPL, the Regional Water Board may take separate enforcement action to require cleanup of wastes that are not subject to CERCLA, such as tank cleanups. In such situations, the Regional Water Board could issue a cleanup and abatement order, or other appropriate enforcement order, in the same way it does for any other site.

II. ARAR CRITERIA

1. Applicable or Relevant and Appropriate Requirements

The remedial action at a CERCLA site must attain **applicable** requirements if the remedial action or circumstances at the site satisfy all the jurisdictional aspects of the requirement. Jurisdictional requirements include (1) the party subject to the law; (2) the substances or activities that fall under the authority of the law; (3) the time period during which the law is in effect; and (4) the types of activities the law requires, limits, or prohibits. For example, if a remedial action involved constructing a land disposal unit, 23 California Code of Regulations, Division 3, Chapter 15 requirements would be applicable. If a remedial action included a discharge of treated ground water to a clean aquifer, State Water Board Resolution 68-16 (the Anti-degradation Policy) would be applicable.

The remedial action must attain **relevant and appropriate** requirements to the same degree as applicable requirements. Relevant and appropriate requirements are those requirements that address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. If a requirement is relevant but not appropriate, it would not be applied to the site. The California Environmental Quality Act (CEQA), California Public Resources Code, Division 13, §§21000, et seq., applies to California public agencies, which are defined as state and local agencies, but not to federal agencies. Since one of the jurisdictional requirements of CEQA would prevent it from applying to a federal agency it is not an "applicable" requirement for purposes of a CERCLA action at a federal

facility. However, CEQA would be a relevant and appropriate requirement at such sites. If only part of a requirement is considered relevant and appropriate, that part of the requirement would be applied to the site. For example, if the remedial action involved contaminated ground water caused by discharges to land not within a waste management unit, 23 California Code of Regulations, Division 3, Chapter 15, Article 5 requirements would be considered relevant and appropriate. Chapter 15, Article 5, requirements concerning corrective action are intended to address situations similar to the cleanup of hazardous substances required by CERCLA.

2. More Stringent Requirements

For purposes of CERCLA, state requirements are ARARs only if the requirements are more stringent than federal requirements. State requirements may be considered more stringent than federal requirements in the following ways:

* If the State is implementing a program that is federally authorized and the requirements in that program are required to be "at least as" stringent as federal requirements. For example, to have an approved state program implementing the Resource Conservation and Recovery Act (RCRA) the state program must be at least as stringent as RCRA and its regulations. Thus, an approved state RCRA program would be considered under CERCLA to be more stringent than federal law and would be a state ARAR.

* When the state programs do not have a federal counterpart because they would include requirements that are not found in federal law. The Toxic Pits Cleanup Act (TPCA), Health and Safety Code §25208, would be more stringent. Proposition 65, Health and Safety Code §§ 25249.5 et seq., would be more stringent.

* When state requirements are similar to federal requirements. State requirements that are more stringent than federal requirements are state ARARs. For example, the State Water Board's Chapter 15 requirements specify land disposal siting requirements that are in some respects more stringent than the federal RCRA siting requirements. Where the remedy would include land disposal on site, Chapter 15 would be applicable. More stringent state MCLs would be ARARs. The California Water Code is more stringent than federal requirements because in part it is in lieu of the Clean Water Act and in part it includes requirements not found in federal law.

3. Timely Manner

CERCLA requires EPA to provide the State with the opportunity for substantial and meaningful involvement in the initiation, development, and selection of the remedial action. CERCLA §121(f), 42 U.S.C. §9621(f). EPA must provide the State with an opportunity, among other things, to participate in long-term planning at NPL sites, to comment on studies concerning the remedial investigation, feasibility study, and engineering design, to comment on the proposed remedial plan, and to provide ARARs.[4] EPA must also provide the State with an opportunity to participate in negotiations with any potentially responsible parties (PRPs). For federal facilities, these requirements would apply at both NPL and non-NPL sites.

As part of the review process, the Regional Water Boards should determine and provide its ARARs to EPA, in coordination with the Department of Toxic Substances Control (DTSC) and other state agencies.[5] The ARARs must be provided to EPA in a timely manner. EPA has determined that "in a timely manner" means as early as possible but at least prior to the issuance of the final Record of Decision (ROD) for the site. See 40 CFR 300.400(g)(5), 300.515(d)(1), and 300.515(h)(2). The appropriate time period for the Regional Water Boards to provide their ARARs usually begins at the Remedial Investigation (RI) stage of the remedial action and continues to the issuance of the final ROD. EPA usually provides a time schedule for identification of ARARs, but it is the responsibility of the Regional Water Boards to provide ARARs regardless of the existence of a formal agreement. If the Regional Water Boards do not provide their ARARs in a timely manner, EPA has stated that it need not incorporate the ARARs into the remedial action.

After issuance of the ROD, the remedial action may be changed as a result of information obtained during the remedial design phase. If EPA does intend to incorporate additional ARARs, or other changes to the ROD after it becomes final, it may only do

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4 The Memorandum of Understanding (MOU) between the Department of Health Services, Toxic Substances Control Program (now the Department of Toxic Substances Control (DTSC)) and the State and Regional Water Boards (August 1, 1990) specifies the criteria for determining appropriate lead and support agency roles at CERCLA sites, including federal sites. The appropriate Regional Water Board and DTSC regional office should coordinate in providing comments, including ARARs, to EPA.

5 The Cleanup MOU referenced in footnote 4, and federal facility agreements establish procedures for providing ARARs to EPA or a federal agency. Regardless of the lead/support agency status, each agency defends its own ARARs.

so in certain situations and must provide public notice and comment. 40 CFR §300.435(c). The ROD must be amended only when the remedial action taken fundamentally alters the remedial action selected in the ROD. If the action taken differs substantially but does not fundamentally alter the action, an explanation of significant difference would be prepared, which is subject to public comment.

The ARAR process is iterative and as the remedial action is further defined, such as the disposal options for treated ground water, the more specific ARARs should be developed. There may be a need to develop several sets of specific ARARs especially during the Feasibility Study (FS) phase. It may be difficult to identify ARARs without appropriate information. For example, it may be difficult to determine compliance with State Water Board Resolution 68-16 (anti-degradation policy) until sufficient technical information about the contaminated plume, receiving water quality and the treatment technology to be used is obtained. Regional Water Board staff should review workplans, RI and FS reports, and other pre-ROD documents and provide comments in writing if necessary to obtain the appropriate information. Appropriate information could include the same type of information required in a report of waste discharge. The dispute resolution process may be necessary if the proper information is not provided to enable the Regional Water Boards to determine the ARARs. It may not be appropriate for the Regional Water Boards to concur in a ROD if there is not sufficient information to determine ARARs.

In documenting ARARs, EPA suggests that states provide citations to the statutes and regulations, and the description and scope of the requirements. They should provide information to show that the requirement is more stringent than the federal requirement and should describe how the requirement is applicable or relevant and appropriate to the site or action. See attached ARAR chart.

4. Properly Promulgated

A state requirement must be promulgated to qualify as an ARAR. According to EPA, a state requirement is promulgated if it is legally enforceable and of general applicability. 40 CFR §300.400(g)(4). A state requirement is legally enforceable if the state law or regulation has its own specific enforcement mechanism or it can be enforced through the state's general legal authority. A state requirement is of general applicability if it "was not adopted for the purpose of precluding onsite remedial actions or other land disposal for reasons other than protecting human health and the environment."

CERCLA §121(d)(2)(C), 42 U.S.C. 9621(d)(2)(C). For example, the California Water Code, Title 23 CCR, water quality control plans, and other policies and guidance of the State and Regional Water Boards that have been adopted formally by the Boards are legally enforceable because the Water Code has enforcement mechanisms for violations of those requirements. Those same laws, regulations, and policies are also of general applicability because they were not adopted for the purpose of precluding CERCLA remedial actions. They apply to all discharges that affect the water quality of California.

The State and Regional Water Board water quality control plans sometimes use the terms "policies" or "guidance," rather than "regulations". The title of the document is not conclusive as to whether or not it is "promulgated." State and Regional Water Board water quality control plans and "policies" that have been adopted by the Boards are "promulgated" and therefore may be ARARs if they meet the other criteria for ARARs.

Water quality control plans contain numerical and narrative water quality standards that are promulgated and therefore may be ARARs. The plans contain methodologies, such as implementation plans or action plans, for attaining compliance with numerical and narrative standards. Specific narrative standards may also contain implementation methodologies. These methodologies should be considered ARARs. For example, State Water Board Resolution 68-16 contains the standard that all discharges to high quality waters must use the "best practicable treatment or control."[6] This use of a technology-based standard is consistent with EPA's Compliance With Other Laws Manual which requires use of best professional judgment to determine the appropriate technology-based standard where effluent limits are not available.[7] EPA does not consider unpromulgated methodologies that are designed to implement narrative standards as ARARs, but at EPA's discretion they may be considered in determining the remedy. Such unpromulgated methodologies could include the determination of the cleanup standard to attain the taste and odor narrative standard. See Part IV below, "To Be Considered" requirements.

5. Consistently Applied ARARs

Section 121(d)(4) of CERCLA authorizes EPA to waive ARARs in certain situations. One such situation occurs when state ARARs have not been or will not be consistently applied to both CERCLA

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6 Resolution 68-16 is also incorporated into other promulgated requirements, including the Chapter 15 regulations (Title 23, California Code of Regulations, Division 3, Chapter 15), and State Water Board Resolution 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304).

7 See Compliance With Other Laws Manual, p. 3-11 (August 1988).

and non-CERCLA sites within the State. State requirements are presumed to have been consistently applied unless there is evidence to the contrary. In other words, the Regional Water Board need not justify the consistent application of its ARARs at the time it submits its ARARs. Evidence must be provided by others to demonstrate that a requirement has not been consistently applied.[8] In most situations, consistent compliance within the jurisdiction of a Regional Water Board is sufficient.

III. OTHER CONSIDERATIONS IN SELECTING ARARS

1. Selection of ARARs

As part of the preparation of the ROD and selection of the remedy, EPA must provide a response to state comments on the draft ROD, including an explanation regarding any decision on ARARs. The comments must be provided in the proposed ROD. CERCLA §121(f)(1)(G), 42 U.S.C. 9621(f)(1)(G). If EPA chooses a remedial action that does not attain state ARARs, EPA must provide the State with an opportunity to concur or not concur with the remedy prior to publishing the final ROD. The State may challenge such a decision.[9] The Regional Water Board staff should carefully review the draft ROD and invoke the dispute resolution process if appropriate to resolve any ARAR or other disputes.

If the Department of Defense (DOD) (or federal agency other than EPA) is the lead federal agency, that federal agency makes the initial selection of the ARARs and remedy at NPL sites. CERCLA §120(e)(4), 42 U.S.C. §9620(3)(4). If there is a dispute, EPA makes the final decision on the selection of the remedy and ARARs. If the state disagrees with the chosen remedy, it may challenge the remedy. See footnote 9. The Regional Water Boards should work with the federal agency and EPA prior to issuance of the ROD to address site-specific ARARs.

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8 See Compliance With Other Laws Manual, p. 1-74 (August 1988).

9 The Regional Water Boards should carefully review the draft ROD regarding ARAR selection and EPA's comments and attempt to resolve concerns prior to issuance of the final ROD. After issuance of the ROD, a challenge to the ROD is cumbersome. For those actions where EPA is the lead federal agency, the State may seek to have the remedy conform to State ARARs by intervening in the United States district court when the proposed consent decree is lodged and prior to entry (approval by the court) of the consent decree. CERCLA §121(f)(2), 42 U.S.C. §9621(f)(2). For those actions where another federal agency is the lead agency, the State must file an action in United States District Court. CERCLA §121(f)(3), 42 U.S.C. §9621(f)(3). In either case, the court would determine whether the State ARAR should apply. If it rules against the State, the State may pay the extra cost of compliance with the State ARAR.

2. ARARs for Removal Actions

Fund-financed removal[10] actions are required to attain or exceed ARARs "to the extent practicable considering the exigencies of the situation." 40 CFR 300.415(i). What is practicable depends on the urgency of the situation and the scope of the removal action. For example, urgent action may be required where leaking drums pose a threat of fire or explosion in a residential area. In such case ARARs need not be identified and attained. Removal actions should comply with ARARs that are within the scope of the action. For example, if the removal action is conducted to remove leaking drums and contaminated soil, ARARs should be considered for those activities, but not for ground water remediation that is not part of the removal action. If the action is not time critical, compliance with ARARs should, in most situations, be required.

Where the removal action on an NPL facility is being taken by another federal agency, e.g., a DOD agency, the action must also attain or exceed ARARs to the same degree as an EPA funded action. See Section V, below, for a discussion of permit requirements, and Section VI, below, for non-NPL site issues.

3. Partial Remedies and ARARS

CERCLA Section 121(d)(4) specifies that where the remedial action selected is only part of a total remedial action, such as an operable unit, it need not attain ARARs if the total remedial action will attain ARARs when completed. At the typical CERCLA site, there are several operable units for which a ROD is prepared. A comprehensive site-wide ROD is also prepared to consider activities at each of the operable units to ensure overall site remediation. Each operable unit may not attain the final ARARs, but the comprehensive site ROD for the final remedy must ensure that ARARs are attained. In addition, certain interim activities, including removal and remedial actions, may raise the question of ARAR compliance. Where ARARs for the interim action are associated with construction of the remedial technology, e.g., action-specific ARARs, the ARARs would be considered final and must be attained as part of that interim remedy, such as meeting effluent limits for discharge of treated ground water. If the ARARs for the interim activity are associated with cleanup levels they need not be attained until completion of the final remedy.

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10 CERCLA defines the term "response" to include both removal actions and remedial actions. 42 U.S.C. 9601 (25). Both removal and remedial actions include the cleanup of the environment. Removal actions are usually short term and lower cost actions necessary to stabilize conditions, particularly in time-critical situations. Remedial actions are intended to provide permanent actions at the site.

4. Enforcement of ARARs.

CERCLA authorizes the State to enforce both federal and state ARARs to which the remedial action at an NPL site is required to conform. Such enforcement is through a civil action in United States district court, not through administrative action before the Regional Water Boards. In addition, if a Regional Water Board is a signatory to an agreement concerning remediation of the site, it may enforce requirements as specified in the agreement. CERCLA §121(e), 42 U.S.C. §9621(e).

IV. "TO BE CONSIDERED" REQUIREMENTS

In addition to attaining ARARs, remedial actions at CERCLA sites must be protective of human health and the environment, CERCLA §121(d)(1), 42 U.S.C. §9621(d)(1). EPA will consider other "materials," such as criteria or guidelines, to make sure that the remedy is protective. Those materials are called "To Be Considered" (TBCs) requirements. EPA uses TBCs to develop numerical cleanup levels where no numerical ARARs exist. EPA also uses TBCs to interpret state requirements. State policies and guidance that have not been promulgated or are not enforceable are not potential ARARs but may be TBCs. The Regional Water Boards should provide to EPA TBCs at the same time that they identify ARARs.

V. PERMIT REQUIREMENTS AT NPL SITES

CERCLA states that no federal, state, or local permit shall be required for any "removal or remedial action conducted entirely onsite, where such remedial action is selected and carried out in compliance with this section." CERCLA §121(e), 42 U.S.C. §9621(e). In other words, if the treatment, storage, disposal, or transport of the hazardous substance, pollutant, or contaminant is carried out onsite, no permit is required, but if the hazardous substance is transported, treated, stored, or disposed of offsite, appropriate federal, state, and local permits are required.

For purposes of permits, the term "onsite" means "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action." See 40 CFR §300.400(e). "Onsite" may include property other than that owned by the responsible party, if, for example, a ground water plume has migrated. "Onsite" could also include uncontaminated areas overlying contaminated ground water. If a location is not onsite then it is offsite. At some federal facilities site-specific agreements, or the NPL, may define the site to include the entire base property. However, for purposes of permit requirements, the site includes

only those areas that fit within the definition of "onsite" contained in the National Contingency Plan (NCP), 40 CFR §300.400(e). In other words, if the discharge would occur to an area that is not contaminated or not in "very close proximity" to a contaminated area, the area is offsite and the discharge would require a permit. Whether or not the area is inside the installation boundaries is not relevant to whether it is offsite or onsite for purposes of permits.

EPA has interpreted the term "permit" to include all administrative requirements associated with a permit, whether or not they relate to actually obtaining a permit. EPA defines administrative requirements as those that prescribe methods and procedures by which substantive requirements are made effective for purposes of a particular environmental or public health program. The CERCLA process is intended to document that the substantive requirements have been identified and will be complied with. Administrative requirements include approval by administrative bodies (such as the Regional Water Boards), consultation requirements, issuance of permits, and documentation, reporting, record keeping, and enforcement requirements associated with permits. The term "permit" does not include "substantive" requirements. The substantive requirements are ARARs and TBCs. Onsite activities must comply with substantive requirements; offsite activities must comply with both substantive and administrative requirements. Monitoring requirements are considered substantive. Best management practices are considered substantive.[11] If it is unclear whether a requirement is administrative or substantive, it should be treated as substantive. The CERCLA process incorporates many administrative requirements the Regional Water Boards would normally impose. For example, EPA could impose administrative requirements, such as reporting and record keeping to ensure compliance with substantive monitoring requirements. The Regional Water Board should request that reporting and record keeping be required.

Where permits need not be obtained, the Regional Water Boards should provide EPA, or the discharger, with a document specifying the substantive requirements that would be applied to the situation if a permit were required, including monitoring requirements. For remedial actions, the Regional Board should provide such requirements in the process of identifying ARARs prior to the issuance of the ROD. For removal actions or other

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11 EPA's CERCLA Compliance With Other Laws Manual (August 1988) provides guidance on determining ARARs under federal and State law. For example, at CERCLA sites there may be no technology-based effluent limitations for wastewater discharges. In that case, best professional judgment is used to identify the appropriate technology (BCT or BAT) to determine the effluent limitations.

actions that might be taken without a ROD, the Regional Water Board should provide the necessary requirements prior to the action.

Offsite discharges from CERCLA sites must comply with all applicable federal, state, and local requirements and are not exempt from administrative, including permitting, requirements. In addition, activities on a site that are not related to the CERCLA response actions are not exempt from the administrative requirements. Such activities could include onsite sewage disposal or other activities associated with operations.

VI. ARARS AND PERMIT REQUIREMENTS AT NON-NPL SITES

Compliance with ARARs is required at private sites that are on the NPL or for fund-financed actions. At all other private sites, the activities must comply with applicable state and local requirements. Private parties whose sites are not subject to CERCLA may attempt to comply with the NCP for private cost recovery purposes. Regardless of their efforts to comply with the NCP, they must still comply with all state requirements, both administrative and substantive.

CERCLA specifically addresses federal facilities in Section 120, 42 U.S.C. §9620. Section 120 specifies that CERCLA applies to the same extent to federal facilities as to any other facility. If a federal facility is listed on the NPL, the remedial action must comply with ARARs to the same extent as other listed sites. EPA makes the final decision concerning the remedial action.[12] If a federal facility is not listed on the NPL, it must comply with state laws regarding removal or remedial actions, including enforcement requirements. CERCLA Section 120(a)(4) states:

> "State laws concerning removal and remedial action, including state laws regarding enforcement, shall apply to removal and remedial action at facilities owned or operated by a department, agency, or instrumentality of the United States when such facilities are not included on the National Priorities List. The preceding sentence shall not apply to the extent a state law would apply any standard or requirement to such facilities which is more stringent

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12 CERCLA §120(e) requires a federal agency to enter into interagency agreement with EPA for all sites on the NPL. The agreements must include the review of alternative remedial actions, selection of the remedy, a schedule for completion of the remedy, and arrangements for long-term operation and maintenance. Selection of the remedy is made by EPA in case of disagreement with the federal agency.

than the standards and requirement applicable to facilities which are not owned or operated by any such department, agency, or instrumentality."

42 U.S.C. §9620(a)(4). However, the State must enforce its requirements consistently at all facilities, both federal, state, and private. The State makes the determination concerning whether the action is in compliance with state law.[13]

VII. STATE AND REGIONAL WATER BOARD ARARS

As part of the scoping phase of the remedial investigation/ feasibility study (RI/FS) process,[14] government agencies are to identify ARARs (and should also identify TBCs) and provide a list to EPA or other lead agency. This part of the Memorandum identifies ARARs and TBCs that Regional Water Board staff should consider for any proposed remedial or removal action at CERCLA sites.

The following is a compilation of the ARARs and TBCs believed to be the most significant to the Regional Water Board for site cleanup activities. A brief description of how these ARARs and TBCs may be relevant is also provided. This summary is intended to highlight those ARARs and TBCs which could be important in determining interim and final actions at most sites. Since remedial actions at a site may not begin for a number of years, it is likely that these ARARs and TBCs will change with time. Regional Water Board staff must provide as complete a list as possible of ARARs and TBCs to guide the remedial investigation, feasibility study and, ultimately, the

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13 DERP, CERCLA §120(a)(4) (concerning non-NPL federal facilities), and CERCLA §121 (concerning ARARs), use different words in stating the responsibilities of federal facilities and create an ambiguity regarding the applications of State laws at federal facilities that are not on the NPL. Federal-State agreements at non-NPL federal facilities, called Federal Facility Site Remediation Agreements (FFSRAs), have recognized that there is a different standard at NPL and non-NPL federal facilities. The FFSRAs do not resolve the dispute raised by the differences between Sections 121 and 120(a)(4) of CERCLA. Instead, they provide that the federal agencies propose the response actions with review, comment, and approval by the State. The agreements also provide for a dispute resolution process if disagreements arise during the review process and approval stages. If the dispute is not resolved through this process, all parties retain their authority to use the courts to resolve the dispute. CERCLA §120(a)(4) has been interpreted in United States v. Pennsylvania Dept. of Environmental Resources, CV-89-1526 (D. Penn., Dec. 2, 1991) to include state laws that provide general authority to require removal and remedial actions.

14 The purpose of the RI/FS is to assess site conditions and evaluate alternatives to the extent necessary to select the remedy.

selection of remedial actions and cleanup levels for a specific site, when requested by the lead agency or by the responsible party. Attached to this Memorandum is a chart for the Regional Water Boards to use in identifying ARARs. (See Attachment I.)

1. Porter-Cologne Water Quality Control Act (Porter-Cologne)

The State Water Board and the nine Regional Water Boards derive their statutory authority from Porter-Cologne and, as such, are responsible for the protection of existing and probable future beneficial uses of waters of the state within their respective jurisdictions. Porter-Cologne is codified in Division 7 of the California Water Code. Under Porter-Cologne, the objectives of the Regional Water Boards are achieved primarily through an on-going program of basin planning, the regulation of waste discharges through the establishment of waste discharge requirements (WDRs) for any proposed discharge of waste to waters of the state or to land, where such discharge has the potential for water quality impacts, and through enforcement of such plans and orders. Additionally, WDRs are written to implement regulations promulgated by the State Water Board in Title 23 of the California Code of Regulations (CCR). The establishment of WDRs by the Regional Water Boards may be necessary to regulate any proposed offsite discharge of waste that is associated with CERCLA site cleanup activities, and any proposed onsite discharge of non-CERCLA waste. The substantive requirements of Porter-Cologne would also be ARARs for onsite remedial activities. Requirements under Porter-Cologne could be chemical-specific, action-specific, and/or location-specific.

Existing WDRs adopted for a site by the Regional Water Boards prior to the start of the RI/FS could also be ARARs for the site. Such WDRs may establish chemical-specific, action-specific, and location-specific limitations on the discharge of waste so as to protect water quality consistent with the Water Quality Control Plans (see below). WDRs also include monitoring and reporting programs to gauge compliance with the requirements. See Parts V and VI of the Memorandum discussing permit requirements at CERCLA sites.

Water Quality Control Plans of the State Water Resources Control Board and the Regional Water Quality Control Boards

Water Quality Control Plans are promulgated pursuant to both state and federal statutes. Porter Cologne (§§13240 et seq.) provides for the adoption of Water Quality Control Plans by the State Water Board and by Regional Water Boards with approval by

the State Water Board. Water Quality Control Plans adopted by the State Water Board include:

- The Inland Surface Waters Plan
- The Enclosed Bays and Estuaries Plan
- The Ocean Plan
- The Thermal Plan (temperature control in coastal and interstate waters and enclosed bays and estuaries)
- The Delta Plan (Sacramento-San Joaquin Delta and Suisun Marsh)
- Lake Tahoe Basin Plan

Of these Plans, the Inland Surface Waters Plan, the Enclosed Bays and Estuaries Plan, and the Ocean Plan are most applicable to CERCLA cleanups. These plans contain numerical and narrative water quality objectives applicable to nearly all discharges to surface water.

Water Quality Control Plans adopted by the Regional Water Boards are often called Basin Plans, as they apply to waters within specific water quality control regions or subregions (basins). Each Regional Water Board has one or more Basin Plans. For example, the Central Valley Regional Water Board has adopted two Basin Plans, one which covers surface and ground waters of the Sacramento River, Sacramento-San Joaquin Delta and San Joaquin River Basins (5A, 5B and 5C), and one which covers surface and ground waters of the Tulare Lake Basin (5D).

After adoption or approval by the State Water Board, the Water Quality Control Plans are noticed to the state legislature. EPA approval, under authority of the federal Clean Water Act, follows. The Water Quality Control Plans fulfill the State and Regional Water Boards' obligation to promulgate **water quality standards** pursuant to §303 of the federal Clean Water Act. Under CERCLA, state standards established in Water Quality Control Plans are potential ARARs.

Unlike water quality standards as defined by the Clean Water Act, Porter-Cologne does not restrict water quality standards to surface waters or point sources and does not impose a particular type or level of control technology on chemicals being discharged. Porter-Cologne requires the promulgation of Water Quality Control Plans which are applicable to ground water and nonpoint sources, as well. Water quality standards in the water

quality control plans include beneficial use designations, water quality objectives to protect those uses, and implementation programs to achieve objectives. Cleanup activities subject to one or more of the Water Quality Control Plans and their water quality standards could be chemical-specific, action-specific, and/or location-specific.

2. Toxic Pits Cleanup Act of 1984 (TPCA)

The Toxic Pits Cleanup Act (California Health and Safety Code, §§25208 et seq.) authorizes the Regional Water Boards to regulate surface impoundments containing hazardous waste. This act prohibits the discharge of liquid hazardous waste or hazardous waste containing free liquids after 30 June 1988 to surface impoundments not meeting specific siting and design standards. Persons owning or discharging to surface impoundments found to be containing hazardous waste are required to file a hydrogeologic assessment report (HAR) with the Regional Water Board upon notification. Closure of these impoundments is regulated under TPCA as well as other programs under Porter-Cologne and Title 23 CCR. Some cleanup activities at CERCLA sites may be subject to TPCA and this statute would be action-specific and location-specific. Since the hazardous waste identification criteria contained in Title 22 CCR, Division 4.5, Chapter 11 (formerly Division 4, Chapter 30, Article 11) are used to define hazardous waste under TPCA, these regulatory criteria would also be chemical-specific ARARs. Since this ARAR requires compliance during the site characterization phase, it is important to inform the responsible party of TPCA applicability in an early stage of the remedial investigation, so that HAR requirements can be met within the CERCLA process.

3. The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

Found in Division 20 of the California Health and Safety Code, Proposition 65 prohibits the discharge of a significant amount of a known human carcinogen or reproductive toxin into any source of drinking water or onto or into land where it may pass into a source of drinking water. The State Office of Environmental Health Hazard Assessment (OEHHA) under the California EPA (Cal/EPA) is the lead agency under this act. OEHHA has promulgated, in Title 22 CCR §§12000 et seq., lists of chemicals subject to the discharge prohibition and regulatory levels defining a significant amount for many of these chemicals. The discharge prohibition and regulatory levels would be chemical-specific, action-specific, and location-specific ARARs.

4. SWRCB Sources of Drinking Water Policy

The State Water Board has adopted a water quality control policy defining sources of drinking water with respect to Proposition 65 and other State and Regional Water Board requirements (Resolution No. 88-63). This policy has been incorporated into the Regional Water Boards' Water Quality Control Plans. The Resolution states that, with few specific exceptions, all surface and ground waters of the state are to be considered existing or potential sources of drinking water. This policy is an ARAR, which could be both chemical-specific and location-specific with respect to cleanup activities.

5. Title 23 California Code of Regulations Division 3, Chapters 15 and 16

Division 3 of Title 23 CCR contains regulations adopted by the State Water Board for the purpose of implementing certain provisions of the California Water Code. Chapter 15 of Division 3 contains regulations governing discharges of waste to land where water quality could be adversely impacted. The regulations in Chapter 16 are intended to protect waters of the state from discharges of hazardous substances from underground storage tanks. The following is a brief description of Chapters 15 and 16.

a. Chapter 15, Discharges of Waste to Land

Chapter 15 regulations govern the discharge of waste to land for treatment, storage, and disposal and establish siting, containment, monitoring, and closure standards. Activities included in this program are the issuance of WDRs by the Regional Water Boards for the discharge of hazardous, designated and nonhazardous solid wastes to land and the oversight of corrective actions at leaking waste management units. Cleanup activities involving the discharge of waste to land or the closure of leaking waste management units at a CERCLA site would be subject to the substantive requirements of Chapter 15. State Water Board Resolution 92-49 requires actions to clean up discharges of waste to comply with Chapter 15. Thus, corrective action, closure, and other requirements of Chapter 15 are applicable to CERCLA cleanups, not just to cleanups involving waste management units. These regulations contain both action-specific and location-specific ARARs.

b. Chapter 16, Underground Tank Regulations

Regulations contained in Chapter 16 allow for local enforcement agencies to be the lead in permitting and enforcement of leaking underground storage tanks. Under these regulations, the Regional Water Boards provide oversight of cleanup activities associated with leaking underground tanks. Corrective actions

taken with respect to leaking underground tanks would be subject to the regulations in Chapter 16 as well as the Water Code and associated regulations and policies. These regulations may be both chemical-specific and action-specific ARARs.

6. Solid Waste Assessment Test (SWAT) Program

Assembly Bill 3525 (Calderon) added §13273 to the California Water Code in 1984. This section authorizes the Regional Water Boards to implement the SWAT program with respect to water quality. The purpose of the SWAT program is to identify solid waste disposal sites that may be leaking hazardous wastes and threatening water quality. Certain aspects of the SWAT program may be applicable to the cleanup activities at CERCLA sites if solid waste disposal units are identified during the remedial investigation. Cleanup and abatement of a disposal unit found to be polluting surface or ground waters may be undertaken pursuant to existing authority in the Water Code and in Chapter 15.

7. Other Standards, Requirements, Criteria, and Limitations and Guidance

a. Statement of Policy with Respect to Maintaining High Quality of Waters in California, State Water Board Resolution No. 68-16

One of the most significant water quality control policies with respect to the protection of water quality from contaminated sites is State Water Board Resolution No. 68-16. This resolution, which satisfies the federal Clean Water Act antidegradation policy requirement, requires the continued maintenance of high quality waters of the state even where that quality is better than needed to protect beneficial uses, unless specific findings are made. In any case, water quality may not be allowed to be degraded below what is necessary to protect beneficial uses. This policy would be a chemical-specific and an action-specific ARAR. This and other important water quality control policies have been incorporated into the Water Quality Control Plans by the Regional Water Boards.

State Water Board Resolution 68-16 applies most often at CERCLA cleanups that involve extracting, treating, and discharging treated ground water. Any activities that result in discharges to high quality water are required to use the best practicable treatment or control of the discharge necessary to avoid a pollution or nuisance and to maintain water quality. Best practicable treatment would take into account technical and economic feasibility. For example, where a ground water aquifer or portion of a ground water aquifer is of high quality (e.g.,

contains nothing but naturally-occurring substances), Resolution 68-16 would prohibit the discharge of contaminated water to that aquifer, unless it was in the public interest to allow such a discharge. If the discharge is allowed, it must be treated prior to discharge using the best practicable treatment or method of control. If the best practicable treatment or method of control will treat the discharge to levels that will maintain the existing water quality, then a discharge which would create a lower quality would not be in compliance with the policy. It might be in the public interest to allow a lower quality if it were not technologically or economically feasible to achieve the higher quality. In that case, the beneficial uses must still be protected.

To comply with Resolution 68-16, the responsible party must determine the water quality of the contaminated area, including the concentrations of total dissolved solids (TDS), metals, and pesticides, as well as the constituents of concern. The responsible party must also determine the water quality of the receiving water. Discharges to high quality water should be treated to the most stringent level that is technically and economically feasible. The goal is to treat to background, but if background is not feasible, the least stringent level is that level that would protect the beneficial uses. Discharges to ground water within the zone of influence of the contaminated plume need not necessarily be treated to as stringent a level as discharges to non-contaminated areas.

Resolution 68-16 also applies to the establishment of cleanup levels for ground water in-site and for soils which threaten water quality. At a minimum, cleanup levels must restore and protect all beneficial uses. To assure that cleanup levels are "consistent with the maximum benefit to the people of the State", cleanup levels must also be the lowest levels that are technologically and economically achievable. Resolution 68-16 forms the basis for the cleanup level setting requirements of Section 2550.4 of Chapter 15. These requirements contain the only mechanism for compliance with Resolution 68-16 which has been promulgated as regulation.

In identifying ARARs, Resolution 68-16 will nearly always be applicable to ground water remediation. The Regional Water Board staff should identify it as an ARAR and should specify as early as possible the data necessary to comply with the Policy.

b. Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304, State Water Board Resolution 92-49

State Water Board Resolution 92-49 establishes policies and procedures for the oversight of investigations and cleanup and

abatement activities resulting from discharges which affect or threaten water quality. The Resolution states that Water Code Section 13304 authorizes Regional Water Boards "to require complete cleanup of all waste discharged and restoration of affected water to background conditions (i.e., the water quality that existed before the discharge)" to the extent feasible. The Resolution requires actions for cleanup and abatement to conform to State Water Board Resolution 68-16 and State and Regional Water Board Water Quality Control Plans and Policies. Cleanup levels are not required to be more stringent than background. Cleanup levels and effluent discharge limitations need not be identical for the same site. Actions to cleanup and abate must also comply with applicable provisions of Title 23 CCR, Division 3, Chapter 15 to the extent feasible.

c. Pretreatment Standards under the Clean Water Act

Discharges of treated waste to sanitary sewers may be proposed as part of a remedial actions. These discharges may be regulated under the pretreatment program of the appropriate Publicly Owned Treatment Works (POTW). The Regional Water Board is involved in oversight of this pretreatment program and how this program relates to the WDRs issued to the POTW. Remedial actions involving proposed discharges to sanitary sewers are regulated by these pretreatment standards and the Regional Water Board would have oversight authority. This ARAR would be action-specific and could be chemical-specific, as well.

d. A Compilation of Water Quality Goals

Many of the water quality objectives contained in the Basin Plans for protection of beneficial uses of waters of the state (California's water quality standards) are stated in narrative terms. To implement these narrative standards, Central Valley Regional Water Board staff has produced a report entitled, A Compilation of Water Quality Goals. This report defines a procedure for selection of appropriate concentrations of chemical constituents and water quality parameters used to determine compliance with the narrative water quality objectives. (See Attachments II and III.) Published numerical values, designed to protect various beneficial uses, have been compiled from a number of state and federal sources in the tables of this report. The procedures for selecting appropriate numerical values from the tables are detailed in the narrative Selecting Water Quality Goals, found at the front of the report. This staff report is periodically updated to remain current with new and revised published numerical values. In conjunction with the Basin Plans, this document could be used at CERCLA sites to determine effluent limits, ground water and surface water cleanup levels, and corresponding remedial actions. Therefore,

the staff report contains chemical-specific and location-specific standards that may be applicable, relevant and appropriate, or TBC, depending on the source of the numerical values.

e. The Designated Level Methodology for Waste Classification and Cleanup Level Determination

The Designated Level Methodology staff report of the Central Valley Regional Water Board offers guidance on how to classify wastes under the definitions contained in the Chapter 15 regulations so as to select appropriate disposal practices protective of beneficial uses of waters of the state. The classification of a waste as a designated waste is based on concentrations of extractable waste constituents as they relate to water quality objectives or numerical values selected from the Water Quality Goals staff report. Waste constituent-specific and site-specific concentration limits called Designated Levels are calculated from numeric water quality limits using conservative assumptions regarding the attenuation of the constituents and/or environmental fate analysis. This methodology could be used at CERCLA sites to determine the classification of wastes and contaminated soils proposed to be left onsite. Therefore, the staff report would be a chemical-specific, action-specific, and location-specific TBC.

According to EPA's CERCLA Compliance with Other Laws Manual, ARARs (and TBCs necessary for protection), pertaining both to contaminant levels and to performance or design standards, should generally be attained at all points of potential exposure, or at the point specified by the ARAR itself. CERCLA requires, to the maximum extent practicable, the use of permanent solutions. Restrictions on use or access should not be a substitute for remediation to appropriate levels. The Designated Level Methodology is also used by the Regional Water Board to determine the degree to which contaminated soils should be cleaned so that they do not threaten to adversely impact existing and probable future beneficial uses of waters of the state. Soil cleanup levels determined by this methodology are based on water quality objectives and, in the case of narrative objectives, numerical limits taken from the Water Quality Goals staff report. The basis of the methodology is similar to CERCLA risk assessment, except that the waters of the state act as the receptor. In California, this is necessary because Porter-Cologne requires the Regional Water Boards to restore or maintain beneficial uses throughout an affected or potentially affected body of water.

VIII. SUPPLEMENTAL DOCUMENTS

- Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, 42 U.S.C. §§9601 et seq.
- National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP), 40 CFR Part 300.
- Defense Environmental Restoration Program, 10 U.S.C. §2701 et seq.
- CERCLA Compliance with Other Laws Manual: Interim Final. EPA, Office of Emergency and Remedial Response, Washington, DC 20460 (EPA/540/G-89/006) (August 1988). Supplement (September 1989).
- EPA Quick Reference Fact Sheets:
- ARARs Q's & A's: General Policy, RCRA, CWA, SDWA, Post-ROD Information, and Contingent Waivers, EPA Office of Emergency and Remedial Response (Publication 9234.2-01/FS-A) (June 19, 1991).
- ARARs Q's & A's: State Ground Water Antidegradation Issues, EPA Office of Emergency and Remedial Response (Publication 9234.2-11/FS) (July 1990).
- CERCLA Compliance with State Requirements, EPA Office of Emergency and Remedial Response (Publication 9234.2-05/FS) (December 1989).

Attachments

ARARs for Ground Water Remediation

#	Source	Standard, Requirement, Criterion, or Limitation	Description	ARARs, or To Be Considered	Comments
1	Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.)	California Water Code Section 13243	The RWQCB may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.	Applicable	Applies to groundwater remedial action.
2	Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)	Water Quality Control Plan (Basin Plan) for the RWQCB, CVR [SITE PAGES WITH BENEFICIAL USES AND WATER QUALITY OBJECTIVES.]	Establishes water quality objectives, including narrative and numerical standards, that protect the beneficial uses and water quality objectives of surface and ground waters in the region. Describes implementation plans and other control measures designed to ensure compliance with statewide plans and policies and provide comprehensive water quality planning. [ADD LIST OF SPECIFIC BENEFICIAL USES AND WATER QUALITY OBJECTIVES FOR WATERS SUBJECT TO ROD.]	Applicable	Specific applicable portions of the Basin Plan include beneficial uses of affected water bodies and water quality objectives to protect those uses. Any activity, including, but not limited to, the discharge of contaminated soils or waters or in-situ treatment or containment of contaminated soils or waters, must not result in actual water quality exceeding water quality objectives.
3	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13304, 13240, 13241, 13242, 13243)	RWQCB, CVR Basin Plan, "Policy for Investigation and Cleanup of Contaminated Sites." [CHECK REGION'S BASIN PLAN FOR SIMILAR PROVISIONS AND REPLACE THIS LISTING.]	Establishes and describes policy for investigation and remediation of contaminated sites. Also includes implementation actions for setting groundwater and soil cleanup standard.	Applicable	Cleanup standards for water should be equal to background concentrations unless such levels are technically and economically infeasible to achieve. In such cases, cleanup standards should not exceed applicable water quality objectives.

#	Source	Standard, Requirement, Criterion, or Limitation	Description	ARARs, or To Be Considered	Comments
4	Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)	RWQCB, CVR Basin Plan, "Policy for Application of Water Quality Objectives" [CHECK REGION'S BASIN PLAN FOR SIMILAR POLICY AND REPLACE THIS LISTING.]]	This policy defines water quality objectives and explains how the Regional Water Board applies numerical and narrative water quality objectives to ensure the reasonable protection of beneficial uses of water and how the Regional Water Board applies Resolution No. 68-16 to promote the maintenance of existing high-quality waters.	Applicable	Applies to groundwater remedial actions.
5	Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)	RWQCB, CVR Basin Plan, "Wastewater Reuse Policy" [CHECK REGION'S BASIN PLAN FOR SIMILAR POLICY AND REPLACE THIS LISTING.]	Requires applicants for waste discharge requirements and discharge permits to evaluate land disposal as an alternative to discharge to surface waters.	Applicable	Applies to groundwater extracted by groundwater treatment system.
6	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13263, 13304)	State Water Resources Control Board Resolution No. 68-16 ("Anti-degradation Policy").	Requires that high quality surface and ground waters be maintained to the maximum extent possible. Degradation of waters will be allowed (or allowed to remain) only if it is consistent with the maximum benefit to the people of the state, does not unreasonably affect present and anticipated beneficial uses, and does not result in water quality less than that prescribed in RWQCB and SWRCB policies. If degradation is allowed, the discharge must meet best practicable treatment or control, which must prevent pollution or nuisance and result in the highest water quality consistent with maximum benefit to the people of the state.	Applicable	Applies to discharges of waste to waters, including discharges to soil that may affect surface or ground waters. In-situ cleanup levels for contaminated ground waters must be set at background level, unless allowing continued degradation is consistent with the maximum benefit of the people of the state. If degradation of waters is allowed, or allowed to remain, the discharge must meet best practical treatment or control standards, and result in the highest water quality possible that is consistent with the maximum benefit to the people of the state. In no case may water quality objectives be exceeded.

#	Source	Standard, Requirement, Criterion, or Limitation	Description	ARARs, or To Be Considered	Comments
7	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240, 13260, 13263, 13267, 13300, 13304, 13307)	State Water Resources Control Board Resolution No. 92-49 (As amended April 21, 1994)	Establishes requirements for investigation and cleanup and abatement of discharges. Among other requirements, dischargers must clean up and abate the effects of discharges in a manner that promotes the attainment of either background water quality, or the best water quality that is reasonable if background water quality cannot be restored. Requires the application of Title 23, CCR, Section 2550.4, requirements to cleanups.	Applicable	Applies to groundwater remedial actions.
8	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240)	State Water Resources Control Board Resolution No. 88-63 ("Sources of Drinking Water Policy") (as contained in the RWQCB's Water Quality Control Plan)	Specifies that, with certain exceptions, all ground and surface waters must have the beneficial use of municipal or domestic water supply.	Applicable	Applies in determining beneficial uses for waters that may be affected by discharges of waste.
9	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304)	Title 27, CCR, Division 2, Subdivision 1(Section 20080 et seq.) Title 23, CCR, Division 3, Chapter 15 (Section 2510 et seq.).	Establishes waste and siting classification systems and minimum waste management standards for discharges of waste to land for treatment, storage, and disposal. Engineered alternatives that are consistent with Title 27/Title 23 performance goals may be considered. Establishes corrective action requirements for responding to discharges to land, including spills and leaks and other unauthorized discharges.	Applicable	The Application of specific sections of Title 27/ Title 23 is discussed below. Provisions of Title 23 apply to hazardous waste and provisions of Title 27 apply to designated and nonhazardous solid waste.

#	Source	Standard, Requirement, Criterion, or Limitation	Description	ARARs, or To Be Considered	Comments
10	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title 27, CCR, Section 20090(d) Title 23, CCR. Section 2511 (d)	Action taken by public agencies to clean up unauthorized releases are exempt from Title 27/ Title 23 accept that wastes removed from immediate place of release and discharged to land must be managed in accordance with classification (Title 27, CCR, Section 20200/ Title 23, CCR, Section 2520) and siting requirements of Title 27 or Title 23 and wastes contained or left in place must comply with Title 27 or Title 23 to the extent feasible.	Applicable	Applies to remediation and monitoring of sites.
11	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title 27, CCR, Section 20400 Title 23, CCR, Section 2550.4.	Concentration limits must be established for groundwater, surface water, and the unsaturated zone. Must be based on background, equal to background, or for corrective actions, may be greater than background, not to exceed the lower of the applicable water quality objective or the concentration technologically or economically achievable. Specific factors must be considered in setting cleanup standards above background levels.	Applicable	Applies in setting ground water cleanup levels for all discharges of waste to land.
12	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title 27, CCR, Section 20410 Title 23, CCR, Section 2550.6	Requires monitoring for compliance with remedial action objectives for three years from the date of achieving cleanup standards.	Applicable	Applies to groundwater remedial actions.

#	Source	Standard, Requirement, Criterion, or Limitation	Description	ARARs, or To Be Considered	Comments
13	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title 27, CCR, Section 20415 Title 23, CCR, Section 2550.7.	Requires general soil, surface water, and ground water monitoring.	Applicable	Applies to all areas at which waste has been discharged to land.
14	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title, 27, CCR, Section 20425 Title, 23, CCR, Section 2550.9.	Requires an assessment of the nature and extent of the release, including a determination of the spatial distribution and concentration of each constituent.	Applicable	Applies to areas at which monitoring results show statistically significant evidence of a release.
15	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267 13304).	Title 27, CCR, Section 20430 Title 23, CCR Section 2550.10	Requires implementation of corrective action measures that ensure that cleanup levels are achieved throughout the zone affected by the release by removing the waste constituents or treating them in place. Source control may be required. Also requires monitoring to determine the effectiveness of the corrective actions.	Applicable	Applies to groundwater remedial acations.

#	Source	Standard, Requirement, Criterion, or Limitation	Description	ARARs, or To Be Considered	Comments
16	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267 13304).	Title 27, CCR, Section 21090	Requires a final cover constructed in accordance with specific prescriptive standards, to be maintained as long as wastes pose a threat to water quality.	Applicable Relevant & Appropriate	Applies to wastes contained or left in place at the end of remedial actions that could affect water quality. Includes closure of landfills and other areas where wastes have been discharged to land. Relevant and appropriate for "closed, abandoned, or inactive" landfills and other areas where wastes have been discharged to land and water quality is threatened.
17	California Safe Drinking Water Act (California Health & Safety Code Section 4010 et seq.)	Title 22, CCR, Section 64400 et seq.	Requirements for public water systems. Includes Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs). State MCLS which are more stringent than the federal MCLs, or not addressed by federal MCLs are [LIST SPECIFIC CONSTITUENTS, e.g., BENZENE.]	Applicable	The act is legally applicable for an aquifer and associated distribution and pre-treatment system that is currently defined as “public water system” If it is only a potential “Public water system,” then the act is relevant and appropriate.
18	Staff Report of the RWQCB, CVR	"A Compilation of Water Quality Goals"	Provides guidance on selecting numerical values to implement narrative water quality objectives contained in the Basin Plan.	To Be Considered	Performance Standard. To be considered in selecting appropriate numerical values to implement the Basin Plan for setting cleanup levels and discharge limits. The numerical values contained in the staff report may be ARAR’s, or Performance Standards, depending on the source of the values.

ARARs for Soil Remediation

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
1	Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)	Water Quality Control Plan (Basin Plan) for the RWQCB, CVR.	Applicable	Establishes water quality objectives, including narrative and numerical standards, that protect the beneficial uses of surface and ground waters in the region. Describes implementation plans and other control measures designed to ensure compliance with statewide plans and policies and provide comprehensive water quality planning. Also includes implementation actions for setting soil cleanup levels for soils which threaten water quality. [ADD SPECIFIC BENEFICIAL USES AND WATER QUALITY OBJECTIVES FOR WATERS SUBJECT TO ROD.]	Specific applicable portions of the Basin Plan include beneficial uses of affected water bodies and water quality objectives to protect those uses. Any activity, including, for example, a new discharge of contaminated soils or in-situ treatment or containment of contaminated soils, that may affect water quality must not result in water quality exceeding water quality objectives. Implementation plans and other policies and requirements may also apply.
2	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13304, 13240, 13241, 13242, 13243)	RWQCB, CVR Basin Plan, "Policy for Investigation and Cleanup of Contaminated Sites." [CHECK REGION'S BASIN PLAN FOR SIMILAR POLICY AND REPLACE.]	Applicable	Establishes and describes policy for investigation and remediation of contaminated sites. Also includes implementation actions for setting groundwater and soil cleanup levels.	Cleanup levels for soils should be equal to levels that would achieve background concentrations in groundwater unless such levels are technically and economically infeasible to achieve. In such cases, soil cleanup levels are such that groundwater will not exceed applicable groundwater quality objectives.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
3	Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)	RWQCB, CVR Basin Plan, "Policy for Application of Water Quality Objectives" [CHECK REGION'S BASIN PLAN FOR SIMILAR POLICY AND REPLACE.]	Applicable	This policy defines water quality objectives and explains how the Regional Water Board applies numerical and narrative water quality objectives to ensure the reasonable protection of beneficial uses of water and how the Regional Water Board applies Resolution No. 68-16 to promote the maintenance of existing high quality waters.	Applies to all cleanups of discharges that may affect water quality.
4	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13263, 13304)	State Water Resources Control Board Resolution No. 68-16 ("Antidegradation Policy")	Applicable	Requires that high quality surface and ground waters be maintained to the maximum extent possible. Degradation of waters will be allowed (or allowed to remain) only if it is consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that prescribed in RWQCB and SWRCB policies. If degradation is allowed, the discharge must meet best practicable treatment or control, which must prevent pollution or nuisance and result in the highest water quality consistent with maximum benefit to the people of the state.	Applies to discharges of waste to waters, including discharges to soil that may affect surface or ground waters. In-situ cleanup levels for contaminated soils must be set so that ground waters will not be degraded, unless degradation is consistent with the maximum benefit of the people of the state. If degradation is allowed, the discharge must meet best practical treatment or control, and result in the highest water quality possible consistent with the maximum benefit to the people of the state. In no case may water quality objectives be exceeded.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
5	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240, 13260, 13263, 13267, 13300, 13304, 13307)	State Water Resources Control Board Resolution No. 92-49 (As amended April 21, 1994)	Applicable	Establishes requirements for investigation and cleanup and abatement of discharges. Among other requirements, dischargers must clean up and abate the effects of discharges in a manner that promotes the attainment of either background water quality, or the best water quality that is reasonable if background water quality cannot be restored. Requires the application of Title 23, CCR, Section 2550.4 requirements to cleanups.	Applies to all cleanups of discharges that may affect water quality.
6	Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240)	State Water Resources Control Board Resolution No. 88-63 ("Sources of Drinking Water Policy") (as contained in the RWQCB's Water Quality Control Plan)	Applicable	Specifies that, with certain exceptions, all ground and surface waters have the beneficial use of municipal or domestic water supply.	Applies in determining beneficial uses for waters that may be affected by dischargers of waste.
7	Staff Report of the RWQCB, CVR	The Designated Level Methodology for Waste Classification and Cleanup Level Determination	To Be Considered	Provides guidance on how to classify wastes according to Title 27, CCR, Division 2, Subdiv.1/ Title 23, CCR, Division 3, Chapter 15, Article 10	Performance standard to be considered in determining the classification of wastes and contaminated soils.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
8	Staff Report of the RWQCB, CVR	"A Compilation of Water Quality Goals"	To Be Considered	Provides guidance on selecting numerical values to implement narrative water quality objectives contained in the Basin Plan.	Performance standard to be considered in selecting appropriate numerical values to implement the Basin Plan for setting cleanup levels and discharge limits. The numerical values contained in the staff report may be applicable, relevant and appropriate, or to be considered, depending on the source of the values.
9	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304)	Title 27, California Code of Regulations (CCR), Division 2, Subdiv. 1 (Section 20080 et seq.), Title 23, CCR, Division 3, Chapter 15, (Section 2510 et seq.)	Applicable	Establishes waste and siting classification systems and minimum waste management standards for discharges of waste to land for treatment, storage, and disposal. Engineered alternatives that are consistent with Title 27/ Title 23 performance goals may be considered. Establishes corrective action requirements for responding to leaks and other unauthorized discharges.	Applies to all discharges of waste to land for treatment, storage, or disposal that may affect water quality. The application of some of the specific sections of Title 27/ Title 23 to different situations is discussed below. Provisions of Title 23 apply to hazardous waste and provisions of Title 27 apply to designated and non-hazardous wast.
10	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269).	Title 23, CCR, Section, 2520, 2521	Applicable	Requires that hazardous waste be discharged to Class I waste management units that meet certain design and monitoring standards.	Applies to discharges of hazardous waste to land for treatment, storage or disposal.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
11	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147 13172, 13260, 13263, 13269).	Title 27, CCR, Section, 20200(c), 20210	Applicable	Requires that designated waste be discharged to Class I or Class II waste management units.	Applies to discharges of designated waste (nonhazardous waste that could cause degradation of surface or ground waters) to land for treatment, storage, or disposal.
12	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147 13172, 13260, 13263, 13269).	Title 27, CCR, Section 20230	Applicable	Requires that inert wast does not need to be discharged at classified units	Applies to discharges of inert wast to land for treatment, storage, or disposal.
13	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269).	Title 27, CCR, Section 20200(c),20220	Applicable	Requires that nonhazardous solid waste be discharged to a classified waste management unit.	Applies to discharges of nonhazardous solid waste to land for treatment, storage, or disposal.
14	Porter-Cologne Water Quality Control Act (California Water Code Sections 13260, 13263, 13370.5, 13372, 13373, 13374, 13375, 13376, 13377, 13383).	40 CFR Parts 122, 123, 124, National Pollution Discharge Elimination System, implemented by California Storm water Permit for Industrial Activitities, State Water Resources Control Board Order #97-03-DWQ.	Applicable	Regulates pollutants in discharge of storm water associated with hazardous waste treatment, storage, and disposal facilities, wastewater treatment plants, landfills, land application sites, and open dumps. Requirements to ensure storm water discharges do not contribute to a violation of surface water quality standards.	Applies to storm water discharges from industrial areas. Includes measures to minimize and/or eliminate pollutants in storm water discharges and monitoring to demonstrate compliance.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
15	Porter-Cologne Water Quality Control Act (California Water Code Sections 13260, 13263, 13370.5, 13372 13373, 13374, 13375, 13376, 13377, 13383).	40 CFR Parts 122, 123, 124, National pollution discharge elimination system, implemented by State Water Resources Control Board Order No. 92-08 DWQ	Applicable	Regulates pollutants in discharge of storm water associated with construction activity (clearing, grading, or excavation) involving the disturbance of 5 acres or more. Requirements to ensure storm water discharges do not contribute to a violation of surface water quality standards.	Applies to construction areas over 5 acres in size. Includes measures to minimize and/or eliminate pollutants in storm water discharges and monitoring to demonstrate compliance.
16	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147 13172, 13260 13263, 13267 13304).	Title 27, CCR, Section 20080(g), Title 23, CCR, Section 2510(g)	Applicable	Requires monitoring. If water quality is threatened, corrective action consistent with Title 27, Title 23 is required	Applies to areas of land where discharges had ceased as of November 27, 1984 (the effective date of the revised Title 27/ Title 23 regulations).
17	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title 27, CCR, Section 20090(d) Title 23 CCR, Section 2511(d)	Applicable	Actions taken by public agencies to cleanup unauthorized releases are exempt from title 27/ Title 23 accept that wastes removed from immediate place of release and discharged to land must be managed in accordance with classification (Title 27 CCR, Section 20200/ Title 23 CCR, Sections 2520) and siting requirements of Title 27 or Title 23 and wastes contained or lift in place must com ply with Title 27 or Title 23 to the extent feasible.	Applies to remediation and monitoring of sites.

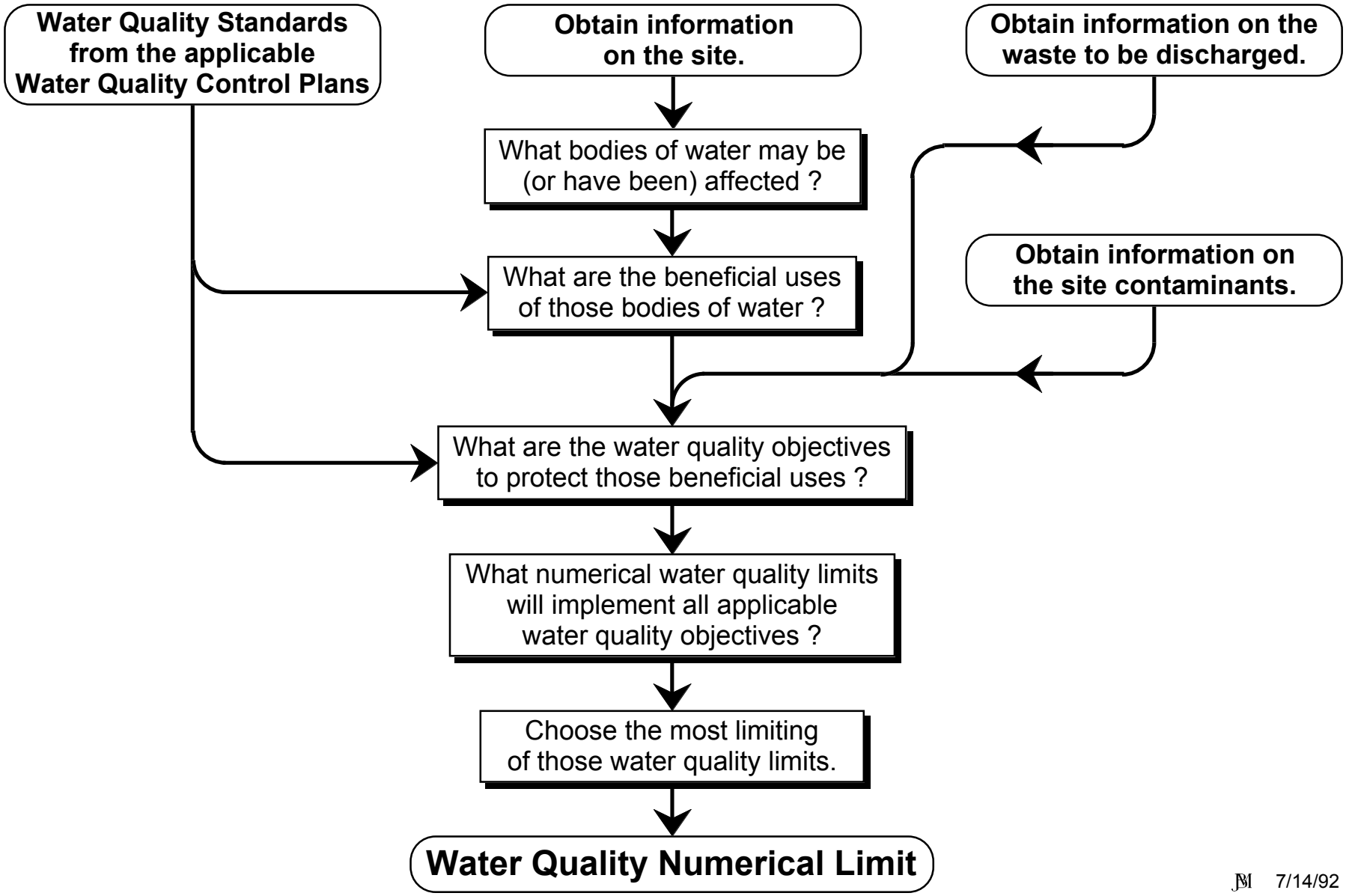
#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
18	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).	Title 27, CCR, Section 20080 (d) Title 23, CCR, Section 2510(d)	Applicable	Requires closure of existing waste management units according to Title 27/Title 23	Applies to "existing" waste management units (i.e., areas where waste was discharged to land on or before 27 November 1984, but that were not closed, abandoned, or inactive prior to that date).
19	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 1323, 13269).	Title 27, CCR, Section 21400, Title 23, CCR, Section 2582.	Applicable	Requires surface impoundments to be closed by removing and treating all free liquid and either removing all remaining contamination or closing the surface impoundment as a landfill.	If water quality is threatened, this section is relevant and appropriate for natural topographic depressions, excavations, and diked areas where wastes containing free liquids were discharged.
20	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).	Title 27, CCR, Sections 20385-20435 Title 23, CCR, Section 2550 .	Applicable	Where groundwater monitoring is required under 2510 or 2511 of Ch 15 (and equivalent for Title 27), applies to authorized waste management units as well as unauthorized discharges of waste to land and to closed abandoned or inactive units.	Applies to all areas in which waste has been discharged to land to determine the threat to water quality.
21	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).	Title 27, CCR, Section 20385, Title 23, CCR, Section 2550.1	Applicable	Requires detection monitoring. Once a significant release has occurred, evaluation or corrective action monitoring is required.	Applies to all areas in which waste has been discharged to land to determine the threat to water quality.
22	Porter-Cologne Water Quality Control Act (California Water	Title 27, CCR, Section 20390, Title 23, CCR, Section 2550.2	Applicable	Requires establishment of a water quality protection standard consisting of a list of constituents of concern, concentration limits, compliance	Applies to all areas in which waste has been discharged to land where groundwater is threatened.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
	Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).			monitoring points and all monitoring points. This section further specifies the time period that the stanadard shall apply.	
23	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).	Title 27, CCR, Section 20395, Title 23, CCR, Section 2550.3	Applicable	Requires development of a list of constituents of concern which include all waste constituents, that are reasonably expected to be present in the soil from discharges to land, and could adversely effect water quality.	Applies to all areas in which waste has been discharged to land where groundwater is threatened.
24	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).	Title 27, CCR, Section 20400, Title 23, CCR, Section 2550.4	Relevant and Appropriate	Concentration limits must be established for groundwater, surface water, and the unsaturated zone. Must be based on background, equal to background, or for corrective actions, may be greater than background, not to exceed the lower of the applicable water quality objective or the concentration technologically or economically achievable. Specific factors must be considered in setting cleanup standards above background levels.	If water quality is threatened, this section applies in setting soil cleanup levels for all cleanups of discharges of waste to land.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
25	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).	Title 27, CCR, Section 20405, Title 23, CCR, Section 2550.5	applicable	Requires identification of the point of compliance , hydraulically down gradient from the area where waste was discharged to land.	Applies to all areas in which waste has been discharged to land where groundwater is threatened.
26	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).	Title 27, CCR, Section 20410 Title 23, CCR, Section 2550.6	Relevant and Appropriate.	Requires monitoring for compliance with remedial action objectives for three years from the date of achieving cleanup levels.	Applies to all soil cleanup activities.
27	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).	Title 27, CCR, Section 20415 Title 23, CCR, Section 2550.7.	Relevant and Appropriate.	Requires general soil, surface water, and ground water monitoring.	Applies to all areas in which waste has been discharged to land.
28	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260 13263, 13267, 13269).	Title 27, CCR, Section 20420, Title 23, CCR, Section 2550.8.	Applicable	Requires detection monitoring to determine if a release has occurred.	Applies to all areas where waste has been discharged to land and groundwater is threatened.

#	Source	Standard, Requirement, Criterion, or Limitation	ARARs, or To Be Considered	Description	Comments
29	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).	Title 27, CCR, Section 20425 Title 23, CCR, Section 2550.9	Applicable	Requires an assessment of the nature and extent of the release, including a determination of the spatial distribution and concentration of each constituent.	Applies to sites at which monitoring results show statistically significant evidence of a release.
30	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).	Title 27, CCR, Section 20430 Title 23, CCR, Section 2550.10	Relevant and Appropriate	Requires implementation of corrective action measures that ensure that cleanup levels (i.e., water quality protection standard established under section 2550.2) are achieved throughout the zone affected by the release by removing the waste constituents or treating them in place. Source control may be required. Also requires monitoring to determine the effectiveness of the corrective actions.	If water quality is threatened, this section applies to all soil cleanup activities.
31	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).	Title 27, CCR, Section 20950; 22207 (a); 22212 (a), and 22222. Title 23, CCR, Section 2550.0 (b); 2580; 2580(f).	Applicable	General closure requirements, including continued maintenance of waste containment, drainage controls, and groundwater monitoring throughout the closure and post-closure maintenance periods.	Applies to partial or final closure of waste management units.
32	Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269	Title 27, CCR, Section 21090	Relevant and Appropriate	Requires a final cover for landfills constructed in accordance with specific prescriptive standards, to be maintained as long as wastes pose a threat to water quality.	If water quality is threatened, this section is relevant and appropriate for wastes contained or left in place at the end of remedial actions that could affect water quality. Includes closure of landfills and other areas where wastes have been discharged to land.

Selecting Water Quality Numerical Limits



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ATTACHMENT 11

The following is offered as an example of the enumeration of Chapter 15 requirements and Water Quality Control Plan standards applicable to setting ground water cleanup levels for a hypothetical CERCLA site contaminated with a mixture of chlorinated solvents and diesel:

STANDARDS FOR GROUND WATER AT THE COMPANY "X" FACILITY, CENTRAL VALLEY COUNTY

Water Quality Protection Standard

The Company "X" Facility contains a TPCA impoundment, which is a waste management unit. Therefore, the TPCA impoundment is subject to the requirements of 23 California Code of Regulations, Division 3, Chapter 15, *Discharges of Waste to Land*.[1] Article 5 of Chapter 15 requires that the Regional Water Board establish a water quality protection standard for each waste management unit. The water quality protection standard includes concentration limits for constituents of concern, which must be met at and downgradient of the point of compliance. The point of compliance is a vertical surface through the uppermost aquifer at the downgradient edge of the waste management unit. §2550.4 requires that concentration limits be established at background levels. Only in a corrective action program where the discharger has demonstrated that background levels are technologically and economically feasible to achieve, may the Regional Water Board adopt concentration limits greater than background (CLGBs). §2550.4(c) and (e) require that the CLGBs:

a) shall be set at the lowest concentrations for the individual pollutants which are technologically and economically achievable;

b) shall not exceed the maximum concentrations allowable under applicable statutes and regulations for individual pollutants (includes water quality objectives and implementation programs to protect beneficial uses from the applicable Water Quality Control Plans, established under the Water Code);

c) shall not pose a hazard to health or to the environment (risk assessment); and

d) theoretical risks from concentrations of pollutants associated with the release shall be considered additive across all media of exposure and shall be considered to be at

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[1] Chapter 15 requirements may also be invoked through State Water Board Resolution 92-49, which states, in part:

"III. The Regional Water Board shall implement the following procedures to ensure that dischargers shall have the opportunity to select cost-effective methods for detecting discharges or threatened discharges and methods for cleaning up or abating the effects thereof. The Regional Water Board shall:

"F. Require actions for cleanup and abatement to:

"2. Implement the applicable provisions of Chapter 15, Division 3, Title 23, California Code of Regulations, to the extent feasible"

least additive for those pollutants which cause similar toxicologic effects and for those which are carcinogens.

Water Quality Standards

Under the federal Clean Water Act, "water quality standards are provisions of state or federal law which consist of a designated use or uses for waters of the United States and water quality criteria for such waters based upon such uses." [40 CFR 130.2(c) and 131.3(i)] Under the Porter-Cologne Act, the Water Quality Control Plans contain the state's water quality standards, which are applicable to surface and ground "waters of the state". These standards include: beneficial use designations, water quality objectives (criteria) to protect such uses, and implementation program requirements to achieve the objectives. These water quality standards are enforceable standards for surface and ground water quality, as opposed to drinking water standards, which which are enforceable standards for water within a water distribution system and at the tap.

Beneficial Uses

Chapter II of the Water Quality Control Plan for the Sacramento River, Sacramento-San Joaquin Delta, and San Joaquin River Basins (Basin Plan) identifies the following beneficial uses of ground water in the area of the Company "X" Facility:

municipal and domestic supply

agricultural supply — irrigation and stock watering

industrial supply — process and service

Shallow ground water beneath the Company "X" Facility does not meet any of the exceptions from being "considered to be suitable, or potentially suitable, for municipal or domestic water supply" under State Water Board Resolution 88-63, the "*Sources of Drinking Water*" policy.

Water Quality Objectives

Chapter III of the Basin Plan identifies the following water quality objectives applicable to ground water in the area of the Company "X" Facility:

a) "Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."

b) "Ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum

contaminant levels specified in California Code of Regulations, Title 22, Division 4, Chapter 15." [drinking water standards]

c) "Ground waters designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use."

d) "Ground waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses".

Implementation Program Requirements

Chapter IV of the Basin Plan identifies the following implementation program requirements applicable to the Company "X" Facility and to ground water in the area:

a) State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Water in California [Antidegradation Policy] — "generally restricts the Regional Board and dischargers from reducing the water quality of surface or ground waters even though such a reduction in water quality might still allow the protection of the beneficial uses associated with the water prior to the quality reduction. The goal of the policy is to maintain high quality waters and the Regional Board must enforce it. Changes in water quality are allowed only if the change is consistent with maximum benefit to the people of the State; does not unreasonably affect present and anticipated beneficial uses; and, does not result in water quality less than that prescribed in water quality control plans or policies."

b) State Water Board Resolution No. 88-63, Sources of Drinking Water Policy — "specifies which ground and surface waters are considered to be suitable or potentially suitable for the beneficial use of water supply (MUN). See above discussion."

c) Prohibitions, Petroleum — "The Regional Board has prohibited the discharge of oil or any residuary product of petroleum to the waters of the State, except in accordance with waste discharge requirements or other provisions of Division 7, California Water Code."

Water Quality Numerical Limits

The following limiting numerical limits are offered to implement applicable narrative water quality objectives for ground water at the point of compliance. This list will be expanded as necessary to fully implement applicable water quality objectives.

Pollutant	Limiting Concentration	Source
Acenaphthene	20	U. S. EPA NAWQC[2] based on taste and odor
Benzene *	1.0	California Primary MCL; Cancer risk, U. S. EPA, IRIS[3]
1,3-Dichlorobenzene	20	Taste & odor, CA DHS drinking water action level
1,1-Dichloroethane	5	California Primary MCL
1,1-Dichloroethylene *	0.06	Cancer risk, U. S. EPA, IRIS[3]
cis-1,2-Dichloroethylene	6	California Primary MCL
trans-1,2-Dichloroethylene	10	California Primary MCL
Diesel	100	Taste & odor, 10-day SNARL[4] , U. S. EPA (1980)
Ethylbenzene	29	Taste & odor, Federal Register Vol. 54, No. 97, p. 22138
Fluoranthene	42	U. S. EPA NAWQC[2] based on health effects
Hexane	400	U. S. EPA 10-day health advisory ÷ 10 [5]
Naphthalene	20	U. S. EPA health advisory
carcinogenic PAHs[6] *	0.0028	Cancer risk, U. S. EPA, IRIS[3]
Tetrachloroethylene *	5	California Primary MCL
Toluene	42	Taste & odor, Federal Register Vol. 54, No. 97, p. 22139
1,1,1-Trichloroethane	200	California Primary MCL
Trichloroethylene *	5	California Primary MCL
Vinyl chloride *	0.015	Cancer risk, U. S. EPA, IRIS[3]
Xylenes	17	Taste & odor, Federal Register Vol. 54, No. 97, p. 22139

* Overall cancer risk 1×10^{-6} Carcinogen Identification Policy, California DHS

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2 National Ambient Water Quality Criteria.

3 Integrated Risk Information System database.

4 Suggested No-Adverse-Response Level.

5 Health advisory = 4000 µg/l *for _ 10 day exposure*. No lifetime exposure advisory has been developed. However, lifetime advisories are normally at least ten-fold lower than 10-day advisories. Therefore, a level of 400 µg/l should be used as an estimate of a lifetime protective level for n-hexane.

6 For the sum of acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene, as defined in the State Water Board's Inland Surface Waters Plan.